REVISED VERSION

(19) World Intellectual Property Organization International Bureau





(43) International Publication Date 8 July 2004 (08.07.2004)

PCT

(10) International Publication Number WO 2004/056728 A1

- (51) International Patent Classification⁷: 7/20, 6/04
- C07C 6/04,
- (21) International Application Number:

PCT/IB2003/006502

(22) International Filing Date:

3 November 2003 (03.11.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

0229770.3

20 December 2002 (20.12.2002) GB

- (71) Applicant (for all designated States except US): SASOL TECHNOLOGY (UK) LTD [GB/GB]; Purdie Building, North Haugh, St. Andrews, Fife KY16 9ST (GB).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): FORMAN, Grant, Stephen [GB/GB]; 55 Watson Avenue, St. Andrews, Fife KY16 8JE (GB). TOOZE, Robert, Paul [GB/GB]; Pipeland Farmhouse, St. Andrews, Fife KY16 8NL (GB).
- (74) Agents: WILLIAMS, David, John et al.; Page White & Farrer, 54 Doughty Street, London WC1N 2LS (GB).

- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- (88) Date of publication of the revised international search report: 20 January 2005
- (15) Information about Correction:

see PCT Gazette No. 03/2005 of 20 January 2005, Section $\rm II$

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: OLEFINIC METATHESIS IN THE PRESENCE OF PHENOLIC COMPOUNDS

(57) Abstract: According to the present invention there is provided a metathesis reaction between at least two olefinic compounds which are the same or different, each olefinic compound comprising a non-cyclic olefin or a compound which includes a non-cyclic olefinic moiety. The metathesis reaction is carried out in the presence of a Grubbs first generation catalyst and is characterised therein that it is carried out in the presence of a phenolic compound in the form of a phenol or a substituted phenol, which substituted phenol includes at least one hydroxyl and at least one further moiety other than H and OH attached to an arene ring.



INTERNATIONAL SEARCH REPORT

International Application No

A CLASS	DECATION OF CUP ITS	——————————————————————————————————————	B 03/06502
TPC 7	SIFICATION OF SUBJECT MATTER C07C6/04 C07C7/20 C07C6	/04	
According	to International Patent Classification (IPC) or to both national clas	sification and IPC	
B. FIELDS	SSEARCHED		
1,0 /	ocumentation searched (classification system followed by classif ${\tt C07C-B01J}$		
	ation searched other than minimum documentation to the extent th		
Electronic o	data base consulted during the international search (name of data ternal, WPI Data, PAJ, CHEM ABS Da	a base and, where practical, search terr	ns used)
C. DOCUM	ENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the	relevant passages	Relevant to claim No.
X	SAMAK, B A ET AL: "Dramatic so effects on rnig-opening metathe polymerization of cycloalekenes JOURNAL OF MOLECULAR CATALYSIS. CHEMICAL., vol. 160, 2000, pages 13-21, XP ELSEVIER, AMSTERDAM., NL ISSN: 1381-1169 cited in the application page 13 page 16, column 1, line 3 - line 1	sis "A, 002278753	1-24
X Furthe	er documents are listed in the continuation of box C.	Patent family members are I	isted in annex.
'A' documer conside 'E' earlier do filing da 'L' documen which is citation 'O' documer other mo documen later tha	t which may throw doubts on priority claim(s) or cited to establish the publication date of another or other special reason (as specified) it referring to an oral disclosure, use, exhibition or eans the published prior to the international filing date but in the priority date claimed	"T" later document published after the or priority date and not in conflicted to understand the principle invention. "X" document of particular relevance; cannot be considered novel or clipvolve an inventive step when to document of particular relevance; cannot be considered to involve document is combined with one ments, such combination being in the art. "&" document member of the same particular relevance."	or with the application but or theory underlying the considered to the document is taken alone the claimed invention an inventive step when the or more other such docu-
	September 2004	Date of mailing of the International	
	illing address of the ISA European Patent Office, P.B. 5818 Patentiagn 2	Authorized officer	
NL → 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo ni, Fax: (+31-70) 340-3016		O'Sullivan, P	

INTERNATIONAL SEARCH REPORT

International Application No
TCT/IB 03/06502

A :	ation) DOCUMENTS CONSIDERED TO BE RELEVANT	
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
А	NGUYEN S T ET AL: "SYNTHESIS AND ACTIVITIES OF NEW SINGLE-COMPONENT, RUTHENIUM-BASED OLEFIND METATHESIS CATALYSTS" JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, AMERICAN CHEMICAL SOCIETY, WASHINGTON, DC,	1-24
	US, vol. 115, no. 21, 1993, pages 9858-9859, XP002067273 ISSN: 0002-7863 cited in the application	
x	column 1 table 1	25
A	SAMAK, B A ET AL: "Alternating ring-opening metathesis copolymerisation of bicyclo'2.2.1! hept-2-ene and cyclopentene" JOURNAL OF THE CHEMICAL SOCIETY, CHEMICAL COMMUNICATIONS., 1997, pages 2057-2058, XP002278754 CHEMICAL SOCIETY. LETCHWORTH., GB ISSN: 0022-4936 the whole document	25 1-24
	•	